Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
FCC Seeks Comment and Data on Actions to	)	
Accelerate Adoption and Accessibility of	)	GN Docket No. 16-46
Broadband-Enabled Health Care Solutions and	)	
Advanced Technologies	)	
	)	

JOINT REPLY COMMENTS OF QUINTILLION NETWORKS, LLC

Quintillion Networks, LLC and Quintillion Subsea Operations, LLC (collectively "Quintillion"), by its attorneys, hereby submits these reply comments in response to the Federal Communications Commission's ("FCC" or "Commission") *Public Notice* in the above-captioned proceeding.[1]

I. INTRODUCTION.

Quintillion appreciates the efforts of the Commission and the Connect2Health Task Force to promote the advancement of broadband-enabled health technologies and the opportunity to provide feedback on this important consumer initiative. Quintillion supports Chairman Pai's Digital Empowerment Agenda and his focus on ensuring that *all* Americans have access to broadband. Moreover, Commissioner Clyburn's leadership on the Connect2Health Task Force and her focus on ensuring that all Americans benefit from the innovations made possible by broadband-enabled healthcare solutions have been critical. Nevertheless, as the FCC's leadership has recognized, the mission to provide broadband and the concomitant benefits it offers is not complete. Quintillion, therefore, provides these reply comments to assist the FCC in

[1] FCC Seeks Comment and Data on Actions to Accelerate Adoption and Accessibility of Broadband-Enabled Health Care Solutions and Advanced Technologies, *Public Notice*, 32 FCC Rcd 3660 (2017) ("*Public Notice"*).

evaluating the steps it can take to ensure that the Rural Health Care Program strengthens the country's telehealth infrastructure.

II. THE HISTORY AND MISSION OF QUINTILLION.

Quintillion is a privately funded company headquartered in Anchorage, Alaska. Quintillion is constructing a network that will span over 1,200 miles and deploy advanced coherent multi-terabit technology with optical add-drop multiplexing capabilities (the "Quintillion System"). The Quintillion System will be deployed as a trunk and branch configuration with six landings in rural coastal communities in Alaska: Nome, Kotzebue, Point Hope, Wainwright, Barrow, and Prudhoe Bay. Traffic from these communities will be backhauled to Prudhoe Bay, where the Quintillion System will interface with the state-of-the art broadband terrestrial fiber system of Quintillion Networks, which launched in April of this year. Quintillion will wholesale middle-mile and backhaul communications capacity on the terrestrial fiber system, which connects to existing third-party fiber-based networks that provide access to the internet and global networks via points of presence in Anchorage, Hillsboro, and Seattle. The Quintillion System is designed to provide a resilient network with extra repeaters, parallel, redundant equipment, enhanced emergency power, horizontal directional drilling to install conduit in shallows near shore to protect cable and buried spur, and backbone cables where required to avoid identified external risks such as fishing or ice gouging. The Quintillion System is part of a multi-phase international telecommunications project that will add additional Alaska communities and link Alaska to Canada, Europe, and Asia with a fiber-optic broadband cable running along the Arctic Ocean through the Lower Northwest Passage.

The Quintillion System and the interconnecting terrestrial fiber network of Quintillion Networks will enable competitive retail providers to bring affordable high-speed broadband

access and other advanced communications services for the first time to communities in Northwestern and Northern Alaska. Quintillion intends to operate as a private operator and will sell capacity on its cable and terrestrial systems on a wholesale basis to telecommunications companies. As a wholesale operator, Quintillion expects to provide affordable fiber-based middle mile capacity at a fraction of the cost and at higher speeds than existing satellite and microwave backhaul solutions in Alaska, where they are even available.

Quintillion's service to the rural coastal Alaska communities is expected to begin by December 1, 2017. This service will promote the competitive introduction of broadband in rural and remote Northwestern and Northern Alaska at speeds enjoyed by users in the most urban locations in the lower forty-eight states. The availability of high-speed internet access will greatly improve the quality of service and opportunities in the affected communities Alaska, including support for improved telemedicine solutions such as remote diagnostics and specialist consultation. The Quintillion System and the supporting terrestrial fiber network were each developed and are being deployed without universal service funds. However, Quintillion recognizes the important role that universal service support can play in bringing affordable broadband services and the numerous related benefits to rural communities in Alaska.

III. THE RURAL HEALTH CARE PROGRAM PROVIDES SIGNIFICANT BENEFITS TO ALASKANS.

As numerous commenters discussed, the budget for the Rural Health Care Program has not changed since the Commission established the program in 1997.[2] For twenty years, the budget for the Rural Health Care Program has remained at $400 million, of which Alaskan entities received more than $82 million (20.5% of the budget) in 2015. The budget has not been indexed for inflation; had it been indexed the budget would have increased to approximately

[2] *See*, *e.g.*, Comments of Kodiak Area Native Association at 1; Comments of the SHLB Coalition at 6.

$600 million.[3] Similarly, the FCC has not increased the budget to account for the growing number of entities eligible to receive support from the program. The number of entities eligible to receive funding from the Rural Health Care Program expanded significantly when the FCC created the Healthcare Connect Fund[4] and when Congress amended the Communications Act to include skilled nursing facilities as eligible applicants.[5] Finally, advances in telehealth technologies, such as transmission of high-resolution imaging and storage of electronic health records, have increased demands on broadband networks. The combination of scope of the Rural Health Care Program, multiplying costs, and technological innovation without an increase in the budget for the Rural Health Care Program has created great strain on the program.

As Commissioner O'Rielly observed "Alaska is Different" and it is a "pioneer when it comes to the adoption and use of communications technology to deliver health care services, especially in the more remote areas where transportation is costly."[6] Many Alaskan healthcare providers rely on the Rural Health Care Program to improve access to medical care and accelerate diagnosis and creation of a treatment plan, avoid unnecessary travel, and provide enhanced options for local treatment.[7] Indeed, local providers now can consult with specialists

[3] H. J. Res. 14, 30th Leg., 1st Sess. (AK 2017).
[4] Rural Health Care Support Mechanism, *Report and Order*, 27 FCC Rcd 16678 (2012) ("*Healthcare Connect Fund Order*"). The *Healthcare Connect Fund Order* consolidated the former Internet Access and Rural Health Care Pilot Programs to create the Healthcare Connect Fund.
[5] Rural Health Care Connectivity Act of 2016, H. Rep. No. 114-582, at 5 (2016); accord Rural Health Care Connectivity Act of 2015, S. Rep. No. 114-368, at 5 (2016).
[6] Commissioner Michael O'Rielly, *Alaska: Lessons Learned*, FCC Blog (Sept. 5, 2014, 12:49 PM), https://www.fcc.gov/news-events/blog/2014/09/05/alaska-lessons-learned.
[7] *See*, *e.g.*, Comments of The Alaska State Hospital and Nursing Home Association at 1; Letter from Senator Lisa Murkowski, United States Senator, *et al.,* to Chairman Ajit Pai, FCC, GN Docket 16-46 (dated April 11, 2017) ("AK Delegation Letter"); and Comments of Tanana Chiefs Conference at 1.

hundreds of miles away to develop the most appropriate treatment plan[8] and telehealth technologies allow children (who might otherwise be separated from their working parents) and disabled and elderly patients to avoid traveling from remote areas while still receiving high-quality medical treatment.[9] As the Alaskan Congressional delegation noted, the Rural Health Care Program "is essential for allowing providers to deliver affordable, world-class medical care to those living in rural and Bush communities, while saving patients the high costs associated with travel to urban medical centers."[10] In other words, urban comparable pricing is not available for basic services, including telecommunications, parts of remote Alaska and other rural areas of the United States; thus, the importance of the Rural Health Care Program cannot be overstated.

IV. THE FCC MUST ACT TO ENSURE THE SHORT AND LONG TERM VIABILITY OF THE RURAL HEALTH CARE FUND.

As the Commission makes clear, it is imperative that entities have the means necessary to offer telehealth technologies, particularly in unserved and underserved areas.[11] Shortfalls in funding can prevent clinicians, healthcare facilities, and providers in rural areas from extending broadband-enabled health technologies to consumers in hard-to-reach areas.[12] A recent study highlighted the issue when it concluded that the broadband connectivity gap between metropolitan and non-metro areas increased in the four years from 2010 to 2014.[13] The study demonstrates that the percentage of healthcare facilities increased slightly in non-metro areas,

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[8] AK Delegation Letter at 1.
[9] Comments of Alaska Tribal Administrators Association at 2.
[10] AK Delegation Letter at 1.
[11] *Public Notice* at 3662-7.
[12] *Public Notice* at 3671.
[13] Brian Whitacre, *et al.*, *Rural Healthcare's Broadband Gap Widens*, Daily Yonder (Mar. 15, 2016), www.dailyyonder.com/rural-healthcare-falls-further-behind-in broadband-speeds/2016/03/15/12049 ("Whitacre Study").

but at a far slower rate in than metro areas.[14] The most discouraging fact is that in 2014, 28% of healthcare facilities in non-metro areas (compared to just 11% of metro areas) had internet speeds that were *less than* 3 megabits per second ("Mbps"),[15] below the FCC-recommended speeds for solo primary care practices.[16] Moreover, an additional 31% of non-metro healthcare facilities in non-metro areas (compared to just 10% of metro areas) had internet speeds that ranged between 3 Mbps to 10 Mbps,[17] below the speeds recommended by the FCC for small primary care practices, nursing homes, and rural health clinics.[18] This comes as little surprise, since building networks requires an investment of capital. Companies that choose to construct those networks rely on fees from users to recoup their investments, which is far more difficult in rural and remote areas than in densely populated metropolitan areas. Fiber cables, however, can contain dozens of strands of fiber, each capable of carrying huge amounts of data for decades into the future. Deploying fiber is a long-lasting investment that will lower medical care costs and promote economic growth. Because rural and remote areas like those in Alaska are sparsely populated, private investment is not feasible, and public funding, or private public partnership funding would be required, but should only proceed with appropriate service levels and enforced non-discriminatory access requirements.

Quintillion agrees that "broadband can be a game-changer" particularly in remote Alaskan areas—where patients often have to fly long distances to access critical or specialty care, where state-of-the-art medical technology cannot currently be utilized due to the lack of broadband, and where isolated clinics and health centers can save lives and promote community

[14] *Id*.
[15] *Id.*
[16] *See* Federal Communications Commission, *Connecting America: The National Broadband Plan* at 210 (2010), *available at* http://www.broadband.gov ("National Broadband Plan").
[17] *See* Whitacre Study.
[18] National Broadband Plan at 210.

health by using advanced communications technologies to connect with medical expertise not otherwise available."[19] The Universal Service Fund is critical to help bridge the digital divide and the Commission must explore ways to expand the Rural Health Care Program to sufficiently provide service to the most remote and rural parts of America. Funding from the program must be coupled with minimum service performance levels to ensure that the services are capable of supporting advanced telehealth solutions. Doing so will account for the increasing dependence of modern medical practice on the kind of technologies that are enabled by the Rural Health Care Program.

Quintillion urges the FCC to take four steps to ensure the short and long-term success of the Rural Health Care Program. First, the FCC should index the Rural Health Care Program budget for inflation. This will ensure that the program's budget will take into account the rising costs of broadband provided health care services. Second, the FCC should increase the total annual cap of the Rural Health Care Program's funding. As discussed above, the number of entities eligible to receive funding through the Rural Healthcare Program has increased as the program has expanded and the number of healthcare providers increased. Thus, increasing the annual budget for the Rural Healthcare Program will ensure funding for the ever-growing number of entities and services eligible to receive funding. Third, Quintillion requests that the FCC heed the recommendation of several senators and roll over unused RHC money from prior years to future years, as is currently done with the E-rate program.[20] Adopting the Senators' recommendation would fill the current short-term funding shortfall in the program. By taking these three steps, the FCC can increase broadband adoption in rural and remote areas, which will

[19] *Public Notice* at 3675.
[20] Letter from Senator Angus S. King, Jr., United States Senator, *et al.,* to Chairman Ajit Pai, FCC (dated Feb. 27, 2017), *available at* https://www.king.senate.gov/imo/media/doc/2-27-2017_FCC%20for%20RHC_Letter.pdf.

allow health care providers in deliver medical services that would otherwise not be available. Finally, Quintillion encourages the FCC to implement appropriate performance standards for subsidized services. Such performance standards would ensure that the networks constructed using program funding are capable of delivering the state-of-the-art telehealth solutions most in need in rural and remote areas.

V. CONCLUSION.

Quintillion encourages the FCC to begin a rulemaking process to examine how best to meet the needs of rural health care providers given the changes in both health care and telecommunications technologies over the past two decades.

Respectfully submitted,

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